REMARKS

Upon entry of this amendment, claims 2-7 are all the claims pending in the application. Claim 1 has been canceled. New claims 5-7 have been added. No new matter has been added.

Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

I. Claim Rejections under 35 U.S.C. § 102(b)

Claims 1-4 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Yata (U.S. Patent. No. 4,674,836). Applicant respectfully traverses this rejection on the following basis.

Claim 1 is canceled by this Amendment and therefore the rejection is moot. Claim 2 has been rewritten to include the features of base claim 1. Claim 2, as amended, defines a novel combination of features which form a picture display. Included among the features of this picture display is an angle formed by a first face upon which a ray of light is incident and a line perpendicular to the optical axis of the projector which is given by the following equation:

$$\tan\alpha_2 = \left[n_2 \sin \left\{ \sin^{-1}\left((n_3/n_2) \sin\theta_2 + n_1\sin\theta_1 \right) + 2\alpha_1 \right\} + n_1\sin\theta_1 \right] /$$

$$\left[n_1\cos\theta_1 - n_2\cos\left\{ \sin^{-1}\left((n_3/n_2) \sin\theta_2 + n_1\sin\theta_1 \right) + 2\alpha_1 \right\} \right],$$

Applicant submits that the claimed combination, including at least this feature, is neither disclosed nor suggested by Yata.

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Yata discloses an angle formed by a first face upon which a ray of light is incident and a line perpendicular to the optical axis of the projector (see Figure 8) but does not disclose or suggest that the angle is formed so as to meet the above equation. In contrast to the claimed invention, Yata discloses that the angle in question, θ_2, is formed according to the equation at column 4, lines 15-19. This equation is based upon the distance between the light source P and the center O' of the arcs and the distance between the center O of the screen S and the center O' of the arcs (see column 4, lines 3-6). Nowhere does Yata disclose or even remotely suggest that angle θ_2 is formed according to the equation specifically set forth in claim 2.

Therefore, as Yata fails to disclose or suggest all of the features of claim 2, Applicant respectfully requests that the rejection be reconsidered and withdrawn. If the Examiner persists in this rejection, Applicant respectfully requests that the Examiner particularly point out the passages in Yata which correspond to the above discussed feature.

Claim 3 depends from claim 2 and therefore incorporates all of the limitations thereof. Accordingly, Applicant submits that claim 3 is patentable at least by virtue of its dependency.

Claim 4 has been rewritten to include the features of base claim 1. Claim 4, as amended, defines a novel combination of features which form a picture display. Included among the features of this display is a light absorption layer which is formed on an external surface of a second face looking upward, the second face looking upward reflecting a ray of light transmitted through a first face looking downward . Applicant submits that the claimed combination, including at least this feature, is neither disclosed nor suggested by Yata.

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Yata discloses a first face looking downward (see Figures 8 and 9, element 1B) which

receives a ray of light and a second face looking upward (see Figures 8 and 9, element 1A)

which reflects the ray of light transmitted through the first face (see Figure 8). Yata, however,

does not disclose a light absorption layer formed on the surface of the second face looking

upward, as is required by claim 4.

In contrast, Yata discloses a lenticular lens surface having a light absorption layer

(Figures 13 and 14, element 1H; column 4, line 61 – column 5, line 8 and column 7, lines 23-30).

The lenticular lens surface, however, clearly does not correspond to the second face looking

upward as set forth in amended claim 4. Indeed, Yata does not even remotely suggest forming a

light absorption layer on the external surface of the second face looking upward (1A).

Therefore, as Yata fails to disclose or suggest all of the features of claim 4, Applicant

respectfully requests that the rejection be reconsidered and withdrawn. If the Examiner persists

in this rejection, Applicant respectfully requests that the Examiner particularly point out the

passages and structure in Yata which correspond to the above discussed feature.

II. Claim Rejections under 35 U.S.C. § 102(e)

Claims 1-4 stand rejected under 35 U.S.C. § 102(e) as being clearly anticipated by

Moshrefzadeh (U.S. Patent. No. 6,417,966). Applicants respectfully traverse this rejection on

the following basis.

Claim 1 is canceled by this Amendment and therefore the rejection is moot. Claims 2

and 4 have been rewritten to include the features of base claim 1. Claims 2 and 4, as amended,

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each define a novel combination of features which form a picture display. Included among the

features of this picture display is a first face looking downward which receives a ray of light,

wherein the ray of light is transmitted through the first face and is reflected by a second face

looking upward. Applicant submits that the claimed combination, including at least these

features, is neither disclosed nor suggested by Moshrefzadeh.

Moshrefzadeh discloses a ray of light incident on a face of element 1804 (see Figures 18

and 19). In contrast to the claimed invention, the ray of light incident on element 1804 is

reflected through open spaces 1808 between elements 1804 (see Figure 18 and column 19, lines

41-45). Thus, the claimed feature of light being transmitted through a first face looking

downward and reflected by a second face looking upward, as is recited in claims 2 and 4, is

clearly neither disclosed nor suggested by Moshrefzadeh. That is, rather than light passing

through a first face and being reflected by a second face, as is required by claims 2 and 4,

Moshrefzadeh merely discloses a first surface which is positioned such that an incident ray of

light is reflected so as to travel through open spaces.

In addition, claim 2 recites that an angle formed by a first face upon which a ray of light

is incident and a line perpendicular to the optical axis of the projector is given by the equation as

discussed above. Nowhere does Moshrefzadeh disclose or even remotely suggest an angle which

is formed according to the equation specifically set forth in claim 2.

Therefore, as Moshrefzadeh fails to disclose or suggest all of the features of claims 2 and

4, Applicant respectfully requests that the rejection be reconsidered and withdrawn. If the

Examiner persists in this rejection, Applicant respectfully requests that the Examiner particularly

point out the passages and structure in Moshrefzadeh which correspond to the above discussed features.

Claim 3 depends from claim 2 and therefore incorporates all of the limitations thereof. Accordingly, Applicant submits that claim 3 is patentable at least by virtue of its dependency.

III. New Claims

Applicant is adding new claims 5-7 which depend from independent claims 2 and 4. Applicant submits that these claims are patentable for at least the reasons discussed above with regard to claims 2 and 4.
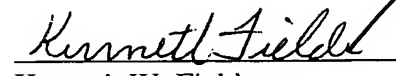
IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Applicant hereby petitions for any extension of time which may be required to maintain

the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to

be charged to Deposit Account No. 19-4880.

Respectfully submitted,

Kenneth W. Fields
Registration No. P-52,430

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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PATENT TRADEMARK OFFICE

Date: March 4, 2003

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1 is canceled.

The claims are amended as follows:

2. (Amended) A picture display of a rear surface projection type [according to claim 1,] comprising:

a projector for shooting out a light flux modulated by a picture,

a transparent screen, on a rear surface of which said light flux shot out from said projector is projected, and

a sawlike prismatic surface which is formed on said rear surface of said transparent screen, and provided with plural edges shaped into concentric circles centering around a central point situated outside said transparent screen,

wherein an optical axis of said projector passes through said central point, and

a ray of light incident on a first face looking downward and neighboring with each of said plural edges is transmitted into said transparent screen, and said ray of light transmitted through said first face is reflected by a second face looking upward and neighboring with said same edge to a front surface of said transparent screen, wherein an angle formed by said ray of light incident on said first face and said optical axis of said projector is greater than 40° and less than 90°, wherein:

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an angle α_2 formed by said first face and a line perpendicular to said optical axis of said

projector is given by a following equation that

$$\tan\alpha_2 = \left[n_2\sin\left\{ \sin^{-1}\left((n_3/n_2) \ \sin\theta_2 + n_1\sin\theta_1\right) + 2\alpha_1\right\} + n_1\sin\theta_1\right] \ /$$

$$\left[n_1\cos\theta_1 - n_2\cos\left\{ \sin^{-1}\left((n_3/n_2) \ \sin\theta_2 + n_1\sin\theta_1 \right) + 2\alpha_1\right\}\right],$$

wherein a refractive index of a first medium brought into contact with said sawlike

prismatic surface of said transparent screen is denoted by n_1, a refractive index of a second

medium forming said transparent screen is denoted by n_2, a refractive index of a third medium

brought into contact with a front surface of said transparent screen is denoted by n_3, an angle

formed by said ray of light incident on said first face and said optical axis of said projector is

denoted by θ_1, a refraction angle of a ray of light shot out from said front surface of said

transparent screen is denoted by θ_2, and an angle formed by said first and second faces is

denoted by α_1.

4. (Amended) A picture display of a rear surface projection type [according to claim 1,]

comprising:

a projector for shooting out a light flux modulated by a picture,

a transparent screen, on a rear surface of which said light flux shot out from said

projector is projected, and

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a sawlike prismatic surface which is formed on said rear surface of said transparent

screen, and provided with plural edges shaped into concentric circles centering around a central

point situated outside said transparent screen,

wherein an optical axis of said projector passes through said central point, and

a ray of light incident on a first face looking downward and neighboring with each of said

plural edges is transmitted into said transparent screen, and said ray of light transmitted through

said first face is reflected by a second face looking upward and neighboring with said same edge

to a front surface of said transparent screen, wherein an angle formed by said ray of light incident

on said first face and said optical axis of said projector is greater than 40° and less than 90°,

wherein:

a light absorption layer for absorbing an external light transmitted into said transparent

screen through said front surface thereof is formed on an external surface of said second face

looking upward.

Claims 5-7 are added as new claims.